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USSR Report

TRANSPORTATION

(FOUO 1/80)



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AIR

SOVIET CIVIL AVIATION DEVELOPMENTS DISCUSSED

Paris AIR & COSMOS in French 23 Feb 80 pp 36, 48

[Text] A. Nazarov, first deputy minister of civil aviation, USSR, announced that the high-capacity, four-engine jet aircraft, the Il-86, will be placed in regular service on Soviet air routes next July. Mr. Nazarov specified that the airliner, equipped to carry 350 passengers, will be used first on routes linking Moscow with the spas and seaside resorts of the Crimea and the Caucasus.

Since the beginning of the plan (in 4 years) Aeroflot has transported 393 million passengers and 11 million metric tons of freight. This year the Soviet company expects to transport more than 103 million passengers, which corresponds to a traffic volume of 159 billion passenger-kilometers. Besides the Il-86, the Yak-42 (120 passengers) and the Czechoslovakian L-410, a new STOL version of which is currently being tested, will be placed in regular service.

Mr Nazarov stressed that civil aviation is one of the most rapidly growing branches of Soviet activity; but some deficiencies are pointed out, namely with regard to non-maintenance of schedules: 12 percent of these cases are attributable to Aeroflot personnel. The average delay in baggage delivery, which was 30 to 40 minutes 3 years ago, has been reduced to 15 minutes. A new automated passenger reservation system, the ASY-5, will be placed in service and will replace the Sirene system.

It is noted that the Aeroflot leaders no longer make any references to the TU-144.

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MOTOR VEHICLE

COMPUTERIZED MANAGEMENT OF KAZAKH MOTOR VEHICLE TRANSPORT

Alma-Ata AVTOMOBIL'NYY TRANSPORT KAZAKHSTANA in Russian No 12, 1979 pp 6-7

[Article by I. Strel'chenya, chief, Administration for the Development and Introduction of ASU's, Ministry of Motor Vehicle Transport, Kazakh SSR: "Using Computers More Effectively"]

[Text] "One of the ways for improving the management mechanism is the introduction of automated control systems (ASU's), as well as the more rational utilization of the available stock of electronic computers." (From a speech given by Comrade D.A. Kunayev, first secretary of the CC CP of Kazakhstan and member of the CC CPSU Politburo, at a meeting of the republic party and management aktiv on 9 October 1979.)

The extensive use of automated production control systems is playing an important role in the solution of the problems facing motor vehicle transport in the 10th Five-Year Plan. The directives of the 25th CPSU Congress specify: "Expand the introduction in the transportation system of facilities for automation, remote control and automated systems for controlling shipments and production processes." This republic's Ministry of Motor Vehicle Transport's system includes a main computer center and 14 interconnected information and computation centers, 4 machine calculating stations, and a bureau that deals with the motor vehicle administrations. The computation centers are equipped with 25 second- and third-generation computers with a total capacity of 1.6 million operations per second. Using this equipment base, we are developing, building and introducing a branch automated control system (OASU) and performing significant volumes of computational operations for the motor vehicle administrations and the ministry.

Right now we are solving problems related to short-term (annual) planning, performing multivariant calculations on the

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formulation of plans concerning shipments and the technical and operating indicators of rolling stock utilization as it applies to trucks, buses and taxis and the delivery of freight to the basic clients of ministries and departments, and calculating requirements for motor vehicles, fuel and lubricating materials. This makes it possible to raise the level of planning, shorten the plan development period and insure that our calculations are of a multivariant type.

With the creation of productive motor vehicle administrations (associations), the enlargement of motor vehicle transport enterprises and the improvement of dispatcher control operations that resulted from this, it became possible to centralize the planning and control of both intracity and intraoblast shipments. In this area, a special place is occupied by the solution of optimization transportation problems with the help of computers: calculating daily shift assignments for drivers, drawing up hourly schedules of motor vehicle operation for grain and sugar beet shipments, securing suppliers for customers, determining the amount of motor vehicle transport required for agricultural product shipments and so on.

The operational planning of shipments of brick, gravel, sand and other cargoes, with publication of the drivers' daily shift assignments, is now widely used in the branch. Computers are used to formulate freight delivery routes and publish the results of operations by motor vehicle makes, with an indication of empty runs, shipment volume and freight turnover, mileage utilization, the amount of time rolling stock is in use, and other indicators. This had made it possible to free dispatching personnel from the daily planning of transport operations and to occupy themselves directly with shipment production work. The daily freight delivery volume, as calculated with the help of computers, is more than 100,000 tons. The solution of this problem is causing a significant reduction in nonproductive freight motor vehicle runs and shortening the idle time lost during loading and unloading operations.

Every year there are larger and larger shipments of grain, sugar beets and other agricultural products from the threshing floors of farms to the elevators that are made according to time schedules worked out on computers. Although these schedules were introduced at only 91 grain-receiving enterprises in 1978, this year they have been implemented at 110. The schedules make it possible to utilize more fully the capacities of loading and unloading machinery, assign the rolling stock more uniformly, and increase the latter's productivity. However, the effectiveness of time schedules depends on how well the motor vehicle administrations, farms and procurement organizations

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are prepared to do their work. Unfortunately, these days not all motor vehicle administrations take this important question seriously. The Kustanayskoye Freight Motor Vehicle Administrations Nos 1 and 2, for example, both let things slide. As a result, the introduction of this progressive method was frustrated. Control centers, centralized motor vehicle detachments and dispatching points on the kolkhozes and sovkhoses were not even organized. There were no practical lessons given to the workers at the motor vehicle transport enterprises and the procurement and agricultural organizations.

The work was done no better in the Ural'skoy, Kzyl-Ordinskoye and Dzhambul'skoye Freight and Alma-Atinskoye Oblast Motor Vehicle Administrations.

Motor vehicle transport control is a complicated process. Therefore, particular attention should be given to an automated system for the integrated processing of the basic primary documents that keep track of motor vehicle transport operations: drivers' trip tickets and goods transportation invoices. It is when these documents are processed on a timely basis that we obtain all of the needed information. In the computation centers there is the technology for performing the necessary daily operations. Right now documents from 95 enterprises are being processed on computers. The leaders and services of motor vehicle enterprises are receiving, on a daily basis, such tabulated forms as the record of the fulfillment of the plan for limited shipments by types of delivery of freight for all ministries and departments on a daily basis and with a cumulative total by volume of shipments and freight turnover for the entire clientele, as well as a daily record of the results of motor vehicle operations by work crew, column and driver.

Two years ago the new instructions "On the Order of Calculations for Freight Shipments by Motor Vehicle Transport" were approved, as well as new type forms for goods transportation invoice and driver trip tickets, the use of which is obligatory for all enterprises, organizations and institutions, regardless of their departmental subordination. The documentation can be processed both by computers and with punchcard tabulating and keyboard machines. Driver trip tickets and the transportation section of goods transportation invoices are filled out by the operating service of a motor vehicle transportation enterprise. The forms must be filled out in strict accordance with the instructions. Experience has shown that the dispatching personnel of motor vehicle enterprises know very little about the order in which the documents are filled out. In the final account, this results in confusion, additional labor on the part of the dispatchers, and idle time on the computers.

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The software for processing these documents on computers already exists, but in the writing of the programs a number of errors were made, as a result of which it is not possible to achieve a high-quality solution for many problems. In the near future the GVTs [Main Computer Center] needs to eliminate the flaws so that we will be able to formulate all the information needed to analyze statistical and accounting reports, including the automated formulation of monthly reports, extra salary charges, fuel and lubricant consumption and so on.

Along with the processing of driver trip tickets and goods transportation invoices, in all the interconnected information and computation centers it is necessary to arrange for computer printouts of bank payment documents and work records. This will eliminate the need for writing them by hand. The daily submittal of payment warrants to the State Bank will make it possible to reduce debt liabilities considerably and speed up the turnover of our fixed working capital. Timely settlements will be insured and the financial discipline of the motor vehicle administrations will be strengthened. Besides this, when the daily duty plans for the motor vehicle operations are being formulated, it will be possible to allow for the ability to pay of the client being served and to solve problems about the feasibility of allocating motor vehicles.

It is necessary to introduce, with the help of computers, the writing of planned assignments for drivers, work crews and motor vehicle columns, which will insure the effective organization of socialist competition.

In order to monitor the economical consumption of fuel and lubricants, in the near future it is necessary to use computers to solve the problem of analyzing motor vehicle fuel consumption everywhere that it is possible, so that recommendations for the redistribution of funds can be made. Along with this, at all possible points we should introduce automation of the calculations during the planning of rolling stock maintenance.

For the purpose of implementing operational dispatching of passenger transport in Alma-Ata, the SKB [Special Design Office] for Industrial Automation in Omsk developed an automated dispatching system for urban passenger transport (ASDU-GPT). It includes an automated dispatching system for urban bus transportation (ASDU-A) and an automated dispatching system for taxi transportation (ASDU-T).

The first stage of the ASDU-A went into experimental commercial operation in April 1976. Although it now controls the movements of 900 buses on 65 routes, many problems have not yet been solved. The introduction into operation of the ASDU-T was unjustifiably delayed.

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In 1977 the Omsk Promavtomatika [Industrial Automation] SKB began to develop an automated dispatching system for intracity freight transfers (ASDU-GP) for Alma-Ata. The introduction of this system will make it possible to improve transport utilization efficiency by improving the quality of the planning of freight motor vehicle operations.

In the near future we are faced with developing and introducing a complex of assignments for the automated control system for the pickup and delivery of containers, railway car and small shipments, and bulk cargoes at the railroad yards in Alma-Ata.

Further development of the branch automated control system and the organization of information facilities should be based on automated data banks that make it possible to eliminate duplication in information collection and provide for a systems approach to the solution of problems. A data bank will make it possible to collect, store and retrieve information and should be the main component of the system. What we are talking about here is that on the basis of computer technology, we need to move on to the creation of a republic automated control system for the national economy of the Kazakh SSR (RASU Kazakh SSR).

The creation of an automated control system data bank and the effectiveness of ASU utilization will depend to a considerable degree on the introduction into operation of unified documentation systems (USD) and a unified system for the classification and encoding of technical and economic information (YeSKK), as well as the introduction of Unionwide and branch classifiers for technical and economic information. The GVTs is faced with developing the order for introducing Unionwide technical and economic information classifiers (OK TEI), allowing for the use of State Standards for the USD.

In accordance with the decision of the USSR Council of Ministers' State Committee for Science and Technology for the purpose of implementing a more extensive exchange of experience among the union republics' motor vehicle transport ministries, KazNPIAT [Kazakh Scientific Research and Planning Institute of Motor Vehicle Transportation] and the GVTs must take upon themselves the functions of being the leading performers in the creation of two systems for motor vehicle transport's general-purpose OASU: "Prospective Branch Planning" and "Technical and Economic Planning." Because of this there will be an acceleration of the development of the necessary plans and solutions to problems related to these subsystems, and parallelism in the work will be eliminated. In order to carry out the assignments formulated for them for this and the next five-year plan, the computation centers will be equipped with the newest high-speed

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computers from the YeS EVM [Unified System of Computers], equipment for the preparation and remote processing of data and other peripheral equipment.

In this respect, the GVTs and the interconnected information and computation centers need to devote more attention to increasing the productivity of their computers and other hardware and improve the quality and timely publication of their information.

The motor vehicle repair services play an important role in the successful implementation of freight shipment assignments. The technical preparedness of the rolling stock depends to a considerable degree on the quality of repaired motor vehicles, engines and assemblies. All the capabilities for solving problems related to controlling motor vehicle repair operations with the help of economic and mathematical models and modern computers are already in existence.

Considerable means have been allocated for the improvement and further development of the automated control system for motor vehicle transport. The assignment for all the workers engaged in introducing the OASU is to use these means as effectively as possible.

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RAILROAD

DEVELOPMENT OF MOSCOW RAILROAD SYSTEM

Moscow ELEKTRICHESKAYA I TEPLOVOZNAYA TYAGA in Russian No 8, Aug 79 signed to press 20 Jul 79 pp 2-5

[Article by I. L. Paristyy, head of the Moscow Railroad]

[Excerpts] In recent years, the rate of electrification has been even higher, and now the extent of electrified lines on the Moscow Railroad is 3893.6 kilometers. This is approximately 42 percent of the total length of the line, or 10 percent of the total length of the railroads served by electric traction.

At the present time, 99.8 percent of all freight shipments on the Capital Mainline is performed by advanced types of traction.

The specialization of repair centers which has been performed here with the aim of reducing the idle time for electric rolling stock under repair has also played an exceptional role. Now the Rybnoye depot, for example, repairs only the VL8 electric locomotives and Ozherel'ye the VL10. Matters are the same at other depots as well.

The following data are an indication of the concentration of repair on the line. The electric locomotives in use at 16 depots undergo hoist-type repair only at 3 depots, and the electric units from 14 other depots are repaired at 4. All of this has permitted repair work to be significantly better organized. Its quality has been greatly improved and costs have been reduced.

The theory of reliability as a measure for increasing the efficiency of locomotive operation, increasing its useful operating time and reducing the idle time for repairs has found broad application in the system of electric locomotive repair and maintenance on the line. First at the Orel, Bryansk II, Rybnoye and Uzlovaya, and then at all other depots, the ways for improving repair quality and reducing the number of failures and breakdown on the line of travel were determined.

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Recently, 3,320 kilometers of high-speed suspension with elastic line have been hung, second insulators have been installed, and the cross-section of the catenary suspension has been increased by installing amplifying lines. Devices to protect the contact cables from burnout have been installed on the overhead spans. The sectional insulators have been replaced by fiberglass ones. A armature-less method for joining the wires of the catenary network, which supply power to the feeder lines, LEP [Electrical Power Transmission Line] -6.10 kW is widely used.

Overall methods for repairing the catenary-network equipment, power equipment and for equipping the traction substations using network schedules permit us to coordinate maintenance and major repair operations, reduce labor costs by concentrating the work time of the electricians due to their performing more than one operation, and it insures the further growth of labor productivity and increases production efficiency.

Combining jobs and expanding service zones are the most effective measures for increasing labor productivity. Combining jobs also increases the flexibility of production control and makes it possible to replace some workers with others when necessary, which is of great significance for improvement of labor organization.

The 10th Five-Year Plan is a five-year plan of efficiency and quality. On the railroad, a method of working on the basis of warranty certificates is used by the electric-energy-supply sectors. The warranty certificates are issued for individual pieces of equipment and even for combined traction substations, sectionalizing points and parallel connection points; for individual anchor sectors and for open runs of the catenary network; for air lines and for individual junctions. Introduction of warranty certificates increases the responsibility of each member of the brigade for the quality of work performed, and it requires improvement of the technical level and a creative relationship with labor.

The development and introduction of an overall system of operations quality control based on the standards of the enterprise is underway with the aims of further improving production efficiency, strengthening supervision of the observance of engineering requirements and the scientific organization of labor and insuring high-quality labor on this basis in all units of electrification service and power engineering.

The CPSU Central Committee has approved the experience of the collectives of enterprises on the Moscow Railroad in accelerating freight shipments by increasing the weight and length of trains.

This start, made by the workers of the Moscow Railroad and approved by the CPSU Central Committee visibly confirms what tremendous production resources have been revealed and placed at the disposal of the 10th Five-Year Plan.

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More than 11,000 trains with increased weight and length have been assembled and passed in just the 4 months of this year. Almost 5 million tons of national-economic freight above the norm was transported on these trains.

The railroad's electrification workers, who mobilized the collectives of the electric power sectors and the service specialists to search out resources and potentials for running trains with increased weight and length, also made a significant contribution to carrying out this experiment.

Electrification of the Moscow Railroad is continuing.

The 2x25 kW sector Vyaz'ma-Krasnoye which is being electrified according to a new ac current system will be accepted for operation this year.

The volume of work planned for the fourth year of the five-year plan by socialist commitments is large, but the railroad collective intends to perform this work ahead of time.

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RAILROAD

MOSCOW RAILROAD SYSTEM PREPARES FOR OLYMPICS

Moscow ELEKTRICHESKAYA I TEPLOVOZNAYA TYAGA in Russian No 1, Jan 80 p 5

[Article by P. M. Akulov, Chief of the Locomotive Maintenance Service of the Moscow Railroad System: "Let's Get Ready for the Olympics"]

[Text] Athletes, journalists, members of national committees, and tourists will be coming to Moscow for the Olympic Games from more than 100 of the world's countries. Naturally, the Moscow Railroad System is conducting an intensified, coordinated operation to ensure the transportation of the participants and guests of the 22nd Summer Olympics.

First of all, a calculation was made of the additional need for hauls and the amount of passenger traffic, as well as for suburban trains. In connection with this, the traffic schedule of passenger trains for 1979--1980 provided for the following additional main routes: Moscow--Ungeny--Bucharest--Sophia, Moscow--Warsaw--Berlin--Paris, Moscow--Brest--Prague, Moscow--Kabul--Siret--Bucharest--Belgrade, and Moscow--Chop--Budapest--Belgrade.

In order to meet passenger requirements for suburban trains during the period when the Olympic Games are being held, a special schedule has been worked out. It provides for an increase in the scope of suburban traffic in the zone of the Moscow complex by 132 trains, along with the lengthening of 52 routes.

Moscow's railroad workers began preparing more than two years ago for the Olympic hauls. A special order by the Railroad System's chief provided for an entire complex of operations with regard to the construction or modernization of production enterprises and stations. Moreover, plans were made to renovate the rolling stock, as well to redecorate and landscape the entrances to the capital.

More than 93 percent of all passenger and suburban hauls on this system are carried out by means of electric traction--electric locomotives and electric trains. Investments in modernizing the Moscow Railroad Center alone have amounted to more than 350 million rubles, more than 400 km of additional main tracks and new lines have been built, and the approaches to the center have been furnished with the newest equipment for automating train traffic.

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In locomotive management the Il'ich Depot and the Prerevo Railroad Motorcar Depot have been modernized, and operations are nearing completion on the Moscow Classification Depot. Work is being carried out on modernizing the Lobnya Depot, which serves the Savelovskoye Line. Modernization is beginning this year on the Domodedovo and Aprelevka Railroad Motorcar Depots, for service to 12-car rolling stocks. Repairs have been carried out on the depot buildings of Moscow II, Moscow-Kiev, and Prerevo; improvements in track illumination have been made by means of modern lights at the Nakhbinkino Depot. In order to improve the through-traffic of passenger trains destined for Leningrad--Crimea, Leningrad--Caucasus, their traffic has been organized without a stop-over in Moscow.

However, Olympiade-80 presents its own heightened requirements with respect to the volume and high standards of hauls, and not enough has been done yet. This is why by the beginning of the Olympics work will be completed on building additional tracks on the main suburban sections, including Moscow--Lyubertsy, Moscow--Solnechnoye, and Moscow--Biryulevo.

In order to ensure the hauling of passengers from the Savelovskoye Line to the "Belorusskaya" Subway Station, construction work has begun on the connecting Smolensko-Savelovskoye Diameter, which will also be completed in 1980.

The conversion of the Moscow Center to use by 12-car electric trains will allow us to increase the throughput-capacity by 15--20 percent. In order to implement this task, it is necessary to lengthen 140 passenger platforms at the suburban stopping points, lengthen the depot tracks, and carry out a number of other operations. Already with the introduction of the current year's new schedule lengthened suburban trains are running on the Kursk, Ryazan, and Belorussian routes, and by the beginning of the Olympics we are counting on completing the conversion of all the approaches to Moscow to the 12-car electric trains.

The frequency of electric-train traffic is growing. On the most intensively traveled runs the intervals between trains during the "peak" rush hours has been reduced to 3--4 minutes.

A great deal of attention is being paid to raising the standards of the passenger hauls and improving the technical and sanitary conditions of the electric trains. In order to raise the quality level of the cleaning operations and effect economies in manual labor, 28 washing and scrubbing machines have been installed, along with vacuum-and-ventilation units.

In order to ensure good order and control in the trains, extensive use is being made of the public-service principle. At the present time there are 3,200 public-service inspectors active in this sphere. Gaining more and widespread acceptance is a new form of public participation--the transfer

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of individual trains to the executive management of those enterprises whose workers regularly utilize the routes in question. More than 50 institutions in the city of Moscow and Moscow Oblast have already taken 368 suburban trains under such control. We should note the active assistance being rendered to our system by the groups of the following enterprises: "Serp i Molot," imeni Likhachev, and "Burevestnik."

The group at the Moscow II-Yaroslavskaya Railroad Motorcar Dept has come out with the initiative: "High standards, good quality, and efficiency in providing Muscovites with transportation service"; it has been approved by the CPSU Moscow Gorkom, the Ministry of Railways, and the Central Committee of the Trade Union of Railroad Transportation Workers. The initiative has gained widespread acceptance at other depots of the Moscow complex. At the present time a system of monitoring and quality control of locomotives and railroad motorcar rolling stock is being introduced, and the Luninsk methods of rolling-stock maintenance are being revived on a new technological basis.

Among the workers at the Railroad Motorcar Depot of the Moscow Center a socialist competition has also developed to improve passenger service. Locomotive crews of the suburban electric trains are engaged in a struggle for the title of "Crew Which Has Guaranteed a High Standard of Passenger Service," while repair workers at the railroad motorcar depots are striving for the title of "Crew Providing Rolling Stock with Excellent Technical and General Maintenance."

The Moscow Railroad System has now worked out a system of managing the Olympic hauls and a special scheme which provides for an entire procedure for operational supervision of the hauls. A railroad staff has been created, consisting of representatives of all the system's services. And a group for passenger hauls and preparing the make-up of trains have been organized.

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